

## REMARKS

The present Response is responsive to the Final Office Action dated on April 6, 2011. As presented above, claims 1, 10, 25 and 27 have been amended. The amendment is based on the original specification, such as page 6, lines 2-10 and page 9, line 27 to page 10, line 10 of the original specification. No new matter has been added. Claims 1-27 remain pending upon entry of the above amendments. Reconsideration and allowance are respectfully requested based on the above amendments and the following remarks.

### **Claim Rejections - 35 USC § 103**

The Office Action maintained the rejection of claims 1-3, 7-9, 12-15 and 17-27 under 35 U.S.C. 103(a) as being un-patentable over Suzuki (U.S. 2003/0209375) in view of Guimarin (U.S. 5,612,606) and in further view of Hammerslag (U.S. 5,927,938). The Office Action maintained the rejection of claims 10, 11 and 16 under 35 U.S.C. 103(a) as being un-patentable over Suzuki in view of Guimarin and in further view of Hammerslag as applied to claim 1, and in further view of Nor (U.S. 5,594,318). The Office Action maintained the rejection of claims 4-6 under 35 U.S.C. 103(a) as being unpatentable over Suzuki in view of Guimarin and in further view of Hammerslag as applied to claim 1, and in further view of Parise (U.S. 2004/0142733).

For the reasons set forth below, Applicant respectfully submits that none of the cited references, either alone or in combination, teaches or renders Claims 1 – 27 obvious under 35 U.S.C. §103(a).

#### **Regarding Claims 1 and 25:**

##### **I. Claims 1 and 25, as amended, are patentable**

In order to advance prosecution, Applicant has amended Claims 1, 10, 25 and 27 to recite a power grid auto-trace apparatus for searching electrical consumption data for a power grid and the associated functions. Applicant submits the independent Claim 1 and 25, as amended, recites features that none of the cited references, alone or in combination, teaches or renders Claim 1 and 25 obvious under 35 U.S.C. §103(a).

For your reference, below is the independent Claim 1 with the amendment.

Claim 1:

An electric public transit system, comprising  
an electric driven bus equipped with a cassette battery set and a bus-mounted control system;  
a charge station placed in a predetermined place for charging cassette battery sets; and  
a loading and unloading apparatus; wherein  
when the bus needs change the cassette battery set, the loading and unloading apparatus unloads the cassette battery set from the bus and loads a charged cassette battery set into the bus;  
the charge station is equipped with a charge control system, and the loading and unloading apparatus is equipped with a loading and unloading control system;  
the loading and unloading control system, the bus-mounted control system and the charge control system are able to intercommunicate;  
whereby when the loading and unloading control system receives a signal sent from the bus-mounted control system of the bus that the bus will return to the charge station, the loading and unloading control system moves the loading and unloading apparatus to a predetermined position corresponding to the bus at the charge station and waits; and  
when the bus arrives at the predetermined position, the loading and unloading control system controls the loading and unloading apparatus to exchange the cassette battery set with a charged cassette battery set, whereby the bus is able to operate on line continuously;  
the charge station further includes a charger, and a power grid auto-trace apparatus for searching electrical consumption data of a power grid; and  
the charge control system determines whether the power grid used is in valleys based on the searching data of the power grid auto-trace apparatus;

if yes, a full charge program is started in the charger controlled by the charge control system, and the cassette battery set is charged with full current until the cassette battery set is fully charged;

if no, a float charge program is started in the charger controlled by the charge control system, and the cassette battery set is charged with float current.

## **II. Applicant's arguments in response of the final Office Action**

Applicant respectfully reminds the Examiner that the Preliminary Amendment of claims has been submitted on December 23, 2005 while this application was filed in USPTO. In the Preliminary Amendment many substantial amendments has been made to the claims. However the claims quoted in the rejection of the final Office Action were the claims before the preliminary amendments, thus Applicant believes that the rejections in the final Office Action were not based on the latest version of the Claims. Applicant respectfully request the Examiner review the following arguments and reconsider the decision.

In paragraph No. 5 at page 27 of the final Office Action, in response of the Applicant's argument that the Suzuki, Guimarin and Hammerslag reference do not teach the loading and unloading apparatus is equipped with a loading and unloading control system, the Examiner indicated that "Suzuki does not disclose the loading and unloading control system but teaches this system with the control system disclosed in figure 6, the battery management unit and the paragraph [0084] – [0086]. Guimarin teaches a loading and unloading control system with intercommunicates with the bus mounted system in column 12 lines 57 – column 13 line 29 wherein the system communicates with the vehicle to determine the type of vehicle and battery used. Hammerslag provides a system wherein information is communicated between the vehicle and the battery exchange system to determine the battery and charge status and to determine location of vehicle."

Applicant disagree the Examiner's reasoning with following points:

1. In Suzuki, the "control system" disclosed in figure 6 and described in paragraph [0084] – [0086] is a battery management unit. The function of this "control system" is

“to store information with regard to whether or not the battery cell 6 has been improperly replaced.” [0084] and “to invalidate the membership card...” [0085]

The function of the loading and unloading control system recites in the Claim 1 is different, which is “...when the loading and unloading control system receives a signal sent from the bus-mounted control system of the bus that the bus will return to the charge station, the loading and unloading control system will move the loading and unloading apparatus to a predetermined position corresponding to the bus at the charge station and waits; and when the bus arrives at the predetermined position, the loading and unloading control system controls the loading and unloading apparatus to exchange the cassette battery set with a charged cassette battery set, whereby the bus is able to operate on line continuously.” Even though they are both called “control system”, they are indeed different subject matters.

Therefore the Examiner’s conclusion that Suzuki “teaches this system with the control system disclosed in figure 6” is invalid.

2. Guimarin does not disclose a loading and unloading control system. With reference to Guimarin, Guimarin discloses a receiving means equipped in the exchange substation for receiving a coded data signal with the vehicle make and model or alternatively with the dimensions and location of the battery platform sent from a data communication means equipped in a vehicle (column 12, line 57 to column 13, line 29 of Guimarin). However, such communication between the exchange substation and the vehicle is performed *within the exchange substation* (figure 11 of Guimarin). Guimarin does not teach any scheme for a vehicle to send a signal to the exchange substation **before the vehicle returns to the exchange substation to inform the impending return of the vehicle**. Thus the exchange substation in Guimarin is unable to know when the vehicle will return to the exchange substation. Accordingly, the exchange substation in Guimarin cannot move a loading and unloading apparatus to a predetermined position corresponding to the vehicle before the vehicle returns to the exchange substation and wait.

Therefore the examiner's conclusion that "Guimarin teaches a loading and unloading control system which intercommunicates with the bus mounted system in column 12 line 57 – column 13 line 29....." is invalid.

3. Hammerslag does not disclose any scheme for a bus-mounted control system of a bus to send a signal to a loading and unloading control system before the bus returns to the charge station. The centralized database in Hammerslag stores battery tracking and history information, and for each battery, "this information may include, for example, the number of times the battery has been recharged, the date of first use within a vehicle, and the current location (e.g., charging station or vehicle) of the battery, and when a given battery is located within a vehicle, the location information may include information about vehicle (such as a vehicle ID number) and/or the vehicle's driver (such as the driver's credit card number)" (column 6, lines 27-57 of Hammerslag). It shows that the centralized database in Hammerslag stores charging information and a current location of the battery in terms of whether the battery is currently located in a charging station or in a vehicle, but **does not store any information that can be used to determine the location of the vehicle and when the vehicle will return to the charge station**. Furthermore, the centralized database in Hammerslag does not store the information regarding the current charge/discharge status of a battery.

Therefore the examiner's conclusion that "Hammerslag provides a system wherein information is communicated between the vehicle and the battery exchange system to determine the battery and charge status and to determine the location of vehicle" is invalid.

**Regarding Claims 2-24 and 26-27:**

As each of Claims 2-24 and 26-27 depends from at least one of the Claims 1 and 25, Applicant submits that those claims are patentable for at least the same reasons.

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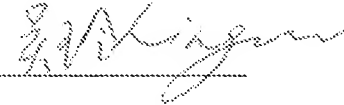
Response to Final Office Action mailed on April 6, 2011

**Conclusion**

In view of the foregoing, Applicant believes that Claims 1-27 of the present application are in condition for allowance and respectfully requests that the Examiner reconsiders and withdraws the outstanding rejections, and allows all the Claims.

If the Examiner finds any remaining impediment to the prompt allowance of these claims that could be clarified with a telephone conference, the Examiner is respectfully invited to call the undersigned.

Respectfully submitted,

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